CLAIMS

1.   A method of storing information relating to the transmission of messages by an entity over a given time period comprising the step of creating a signature comprising a plurality of parameters related to the transmission of messages over that time period wherein the parameters comprise at least one parameter related to the transmission of messages over a portion of the period and also related to the position of the portion in the period, to enable output data to be derived from the stored information.

2.   A method as claimed in claim 1 wherein the signature is created in one of a plurality of predetermined possible formats.

3.   A method as claimed in claim 2 wherein the format of the signature comprises the length of the signature.

4.   A method as claimed in claim 1 wherein said at least one parameter represents the number of events made in the portion of the time period as a proportion of the total number of events made in the whole time period.

5.   A method as claimed in claim 1 wherein said at least one parameter represents the number of events of a predetermined type made in the whole time period as a proportion of the total number of events of the same type made in the whole time period.

6.   A method as claimed in claim 1 wherein the step of creating a signature further comprises the steps of:
storing information about each of a number of events which occurred during the time period;

selecting attributes from this information;

and converting the attributes into the said signature.

7. A method as claimed in claim 1 using an anomaly detector, wherein the stored information is provided as input to the said anomaly detector in order to detect anomalies in the transmission of messages by the entity.

8. A method as claimed in claim 7 wherein the anomaly detector comprises a neural network.

9. The method of claim 1 further comprising the steps of:

creating a second signature comprising a plurality of parameters related to the transmission of messages over a second period shorter than the first and more recent than the first;

updating the first signature by a weighted averaging with the second signature; and

deriving said output data using the signatures.

10. The method of claim 1 wherein the data deriving step is carried out using a predictive model, the method further comprising the steps of:

monitoring the performance of the model ; and

automatically updating the model when the performance reaches a predetermined threshold.

11. The method of claim 1 wherein the data deriving step is carried out using a predictive model, and wherein the model is implemented using at least one instantiated object created using an object oriented programming language and the method further comprises the steps of:

converting the object into a data structure;

storing the data structure; and

recreating the object from the data structure.

12.   A computer system for storing information relating to the transmission of messages by an entity over a given time period comprising:

an input arranged to receive information about each of a number of events which occurred during the time period;

a processor arranged to convert the information into a signature comprising a plurality of parameters related to the transmission of messages over the time period wherein the parameters comprise at least one parameter related to the transmission of messages over a portion of the period and also related to the position of the portion in the period, to enable output data to be derived from the stored information.

13.   A method of deriving output data from information relating to the transmission of messages by an entity over time, comprising the steps of:

(I) creating a first signature comprising a plurality of parameters related to the transmission of messages over a predetermined first time period;

(ii) creating a second signature comprising a plurality of parameters related to the transmission of messages over a second period shorter than the first and more recent than the first;

(iii) updating the first signature by a weighted averaging with the second signature;

and (iv) deriving said output data using the signatures.

14.   A method as claimed in claim 13 wherein the lengths of the first period and the second period are fixed for a particular instantiation of the method.

15. A method as claimed in claim 13 wherein said step (iii) of updating the first signature by a weighted averaging with the second signature further comprises the steps of:

(I) determining a third signature comprising a plurality of parameters related to the transmission of messages over a third period shorter than the second and more recent than the second;

and (ii) updating the second signature by a weighted averaging with the third signature

such that in use an up-to-date comparison of the second signature with the first signature can be obtained.

16. A method as claimed in claim 15 wherein the length of the third period is variable.

17. A method as claimed in claim 13 wherein said step (iii) of updating the first signature by a weighted averaging with the second signature further comprises the step of calculating an exponentially weighted moving average of the first and second signatures.

18. A method as claimed in claim 13 wherein the deriving step comprises the step of detecting anomalies in the transmission of messages in a telecommunications network.

19. A method as claimed in claim 13 wherein the step of comparing the second signature with the updated first signature comprises the use of a neural network.

20. The method of claim 13 wherein the data deriving step is carried out using a predictive model, the method further comprising the steps of:

monitoring the performance of the model ; and

automatically updating the model when the performance reaches a predetermined threshold.

21.   The method of claim 13 wherein the data deriving step is carried out using a predictive model, and wherein the model is implemented using at least one instantiated object created using an object oriented programming language and the method further comprises the steps of:

converting the object into a data structure;

storing the data structure; and

recreating the object from the data structure.

22.   A computer system for deriving output data from information relating to the transmission of messages by an entity over time, the system comprising:

an input arranged to receive information about the transmission of messages by the entity;

a processor arranged to create a first signature comprising a plurality of parameters related to the transmission of messages over a predetermined first time period and to create a second signature comprising a plurality of parameters related to the transmission of messages over a second period shorter than the first and more recent than the first;

a processor arranged to calculate a weighted averaging of the first and second signatures to form an updated first signature;

and a processor arranged to derive said output data using said signatures.